Title

Mass rigidity for asymptotically locally hyperbolic manifolds with boundary

Speaker: Hyun Chul Jang, University of Miami
Date: Nov 11, 2021
Time: 4:00 PM
Room: Virtual

Abstract: Asymptotically locally hyperbolic (ALH) manifolds are a class of manifolds whose sectional curvature converges to $-1$ at infinity. If a given ALH manifold is asymptotic to a static reference manifold, the Wang-Chruściel-Herzlich mass integrals are well-defined for it, which is a geometric invariant that essentially measure the difference from the reference manifold. In this talk, I will present a recent result with L. -H. Huang, which characterizes ALH manifolds that minimize the mass integrals. The proof uses scalar curvature deformation results for ALH manifolds with nonempty compact boundary. Specifically, we show the scalar curvature map is locally surjective among either (1) the space of ALH metrics that coincide exponentially toward the boundary or (2) the space of ALH metrics with arbitrarily prescribed nearby Bartnik boundary data. As a direct consequence, we establish the rigidity of the known positive mass theorems.

Note the start time is 30mins later than usual. Contact Sean Curry for the seminar link.